Abstract

Ecological communities can affect transmission pathways of parasites and pathogens, ultimately affecting disease dynamics. While the community composition of less competent decoy hosts is known to affect diseases in focal hosts, it remains poorly understood whether such diversity effects also exist when non-host organisms remove free-living parasite stages, e.g. by predation. In response surface design laboratory experiments, we investigated non-host diversity effects on the removal of cercarial stages of trematodes, ubiquitous parasites in aquatic ecosystems. In all three combinations of two non-hosts at four density levels, the addition of a second non-host did not generally result in increased parasite removal but neutralised, amplified or reduced the parasite removal exerted by the first non-host, depending on the density. These complex non-host diversity effects were probably driven by intra- and interspecific interactions and suggest the need to integrate non-host diversity effects in understanding the links between community diversity and disease risk.